

How far has *The Korean Journal of Internal Medicine* advanced in terms of journal metrics?

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The Korean Journal of Internal Medicine has already been valued as an international journal, according to a citation analysis in 2011. Now, 2 years later, I would like to confirm how much the Journal has advanced from the point of view of journal metrics by looking at the impact factor, cites per document (2 years), SCImago Journal Rank (SJR), and the Hirsch index. These were obtained from a variety of databases, such as the Korean Medical Citation Index, KoreaMed Synapse, Web of Science, JCR Web, and SCImago Journal & Country Rank. The manually calculated 2012 impact factor was 1.252 in the Web of Science, with a ranking of 70/151 (46.4%) in the category of general and internal medicine. Cites per documents (2 years) for 2012 was 1.619, with a ranking of 267/1,588 (16.8%) in the category of medicine (miscellaneous). The 2012 SJR was 0.464, with a ranking of 348/1,588 (21.9%) in the category of medicine (miscellaneous). The Hirsch index from KoreaMed Synapse, Web of Science, and SCImago Journal & Country Rank were 12, 15, and 19, respectively. In comparison with data from 2010, the values of all the journal metrics increased consistently. These results reflect favorably on the increased competency of editors and authors of *The Korean Journal of Internal Medicine*.

Keywords: Korea; Bibliometrics; Journal impact factor; Periodicals

INTRODUCTION

In 2011, to celebrate *The Korean Journal of Internal Medicine* (KJIM)'s 25th anniversary, journal metrics, such as the impact factor, SCImago Journal Rank (SJR), and Hirsch index (H-index), were obtained from the Korean Medical Citation Index (KoMCI), Web of Science, and Scopus [1]. Two years have now passed since that previous analysis. I have determined how far the Journal has advanced from the point of view of these journal metrics. The results may provide a good incentive to editorial board members and all members of the Korean Association of Internal Medicine.

SOURCES OF JOURNAL METRICS

The KoMCI [2], KoreaMed Synapse [3], Web of Science [4], JCR Web [5], and SCImago Journal & Country Rank (SCImagoJR) [6] were searched and analyzed for journal metrics. Calculation of the impact factor from the Web of Science was as described previously; however, the number of self-citations, although negligible, was included. Self-citations were obtained from KoMCI. Non-countable papers, such as editorials or errata, were excluded during calculations. Cites per documents (2 years) corresponding impact factor and SJR were obtained from SCImagoJR. Total citations from the Web of Science were calculated manually. The H-index, through CrossRef DOI, was retrieved from KoreaMed Synapse. The H-index from Web of Science was calcu-

lated manually and the H-index from Scopus was determined from SCImagoJR. Impact factors, cites per documents (2 years), and the SJR of the *Yonsei Medical Journal* (YMJ) and of the *Journal of Korean Medical Science* (JKMS) were compared with those of KJIM. The definition of each journal metric was explained in the previous paper [1]. The major source titles that cited KJIM papers published from 2008 to 2012 were listed. The number of citations according to publication type was calculated to assess whether editorial strategy on specific publication types was beneficial to journal metrics.

JOURNAL METRICS AND THE EFFECTS OF EDITORIAL STRATEGY

Impact factor

Fig. 1 shows the changes in impact factors of the three journals compared. Impact factors for the year 2012 were 1.274 with a ranking of 70/151 (46.4%) in the category of general medicine for KJIM, 1.306 (69/151, 45.7%) for the YMJ, and 1.249 (71/151, 47.0%) for the JKMS.

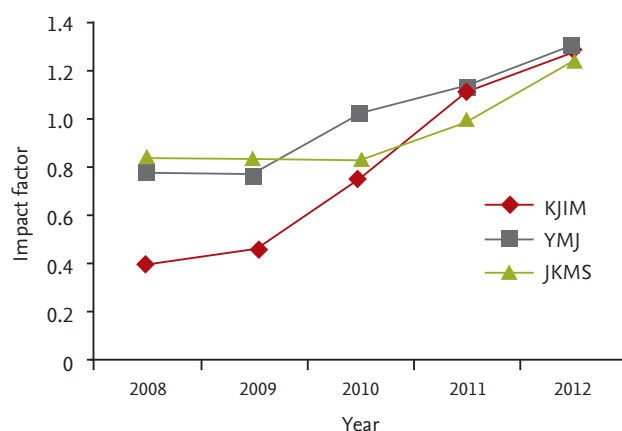


Figure 1. JCR impact factors of *The Korean Journal of Internal Medicine* (KJIM), the *Yonsei Medical Journal* (YMJ), and the *Journal of Korean Medical Science* (JKMS) from 2008 to 2012. Obtained from Web of Science [Internet]. Philadelphia (VA): Thomson Reuters, c2013 [cited 2013 Sep 7]. Available from: <http://webofknowledge.com/wos/> [4]; JCR Web [Internet]. Philadelphia (VA): Thomson Reuters, c2013 [cited 2013 Sep 7]. Available from: <http://webofknowledge.com/jcr/> [5].

Cites per documents (2 years)

Fig. 2 shows the changes in cites per documents (2 years) of the three journals. Cites per documents (2 years) for the year 2012 were 1.619 with a ranking of 267/1,588 (16.8%) in the category of medicine (miscellaneous) for KJIM, 1.581 (273/1,588, 17.2%) for the YMJ, and 1.530 (284/1,588, 17.9%) for the JKMS.

SJR

Fig. 3 shows the changes in SJRs of the three journals. The SJRs for the year 2012 were 0.464 with a ranking of 348/1,588 (21.9%) in the category of medicine (miscellaneous) for KJIM, 0.425 (375/1,588, 23.6%) for the YMJ, and 0.476 (339/1,588, 21.3%) for the JKMS.

Total citations in the Web of Science

Changes in total citations for KJIM in the Web of Science are presented in Fig. 4. The total number of citations in 2012 was 315.

H-index

The H-index of KJIM through CrossRef DOI from KoreaMed Synapse was 12. Those from the Web of Science and SCImagoJR were 15 and 19, respectively.

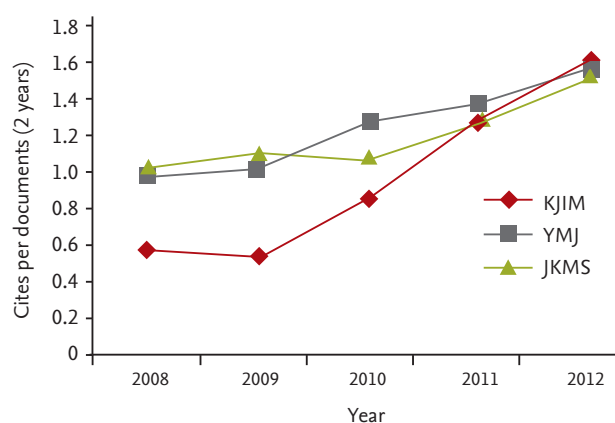


Figure 2. Cites per documents (2 years) of *The Korean Journal of Internal Medicine* (KJIM), the *Yonsei Medical Journal* (YMJ), and the *Journal of Korean Medical Science* (JKMS) from 2008 to 2012. Obtained from SCImago Journal & Country rank [Internet]. Madrid (SP): Scimago Lab, c2007 [cited 2013 Sep 7]. Available from: <http://www.scimagojr.com/> [6].

Source journals that cited KJIM

The major source titles, and their frequencies, that cited KJIM papers published from 2008 to 2012 were as follows: *Molecular Biology Reports* (14), *PLoS One* (12), *World Journal of Gastroenterology* (12), *JKMS* (10), *Journal of the Korean Medical Association* (7), *Endoscopy* (6), *Nephrology and Dialysis Transplantation* (6), *Asian Pacific Journal of Cancer Prevention* (5), *Human Immunology* (5), and *Journal of Clinical Endocrinology and Metabolism* (5). Of the top 10 source titles, three are published from Korea: the *JKMS*, the *Journal of the Korean Medical Association*, and the *Asian Pacific Journal of Cancer Prevention*.

Impact of publication type on citations

Of the papers published from 2009 to 2011, highly cited papers (≥ 8 times) were analyzed for their publication type. Of 12 papers, four were review articles, six were original articles, one was a guideline, and one was a case report. The four articles in 2011 consisted of three review articles and one guideline. The most frequently cited article was a review article in 2010 with 41 citations. Fifteen papers, with the publication types of clinical trials, meta-analyses, multicenter studies, and randomized controlled studies, published from 2009 to 2011, were cited more frequently than other papers; for them, the mean number of citations was 2.79.

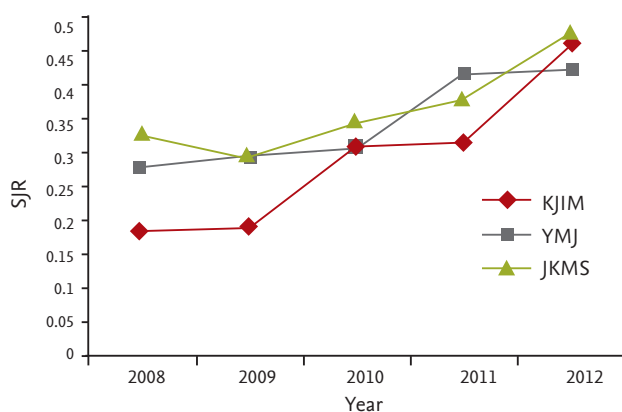


Figure 3. SCImago Journal Ranks of *The Korean Journal of Internal Medicine* (KJIM), the *Yonsei Medical Journal* (YMJ), and the *Journal of Korean Medical Science* (JKMS) from 2008 to 2012. Obtained from SCImago Journal & Country rank [Internet]. Madrid (SP): Scimago Lab, c2007 [cited 2013 Sep 7]. Available from: <http://www.scimagojr.com/> [6].

EFFICACY OF JOURNAL PROMOTION STRATEGIES

From these results, the following questions can be addressed. First, how much have the impact factor, cites per documents (2 years), SJR, and total citations of KJIM increased? Second, how much has the H-index increased? Third, is KJIM competitive with general medical journals from Korea? Fourth, was the editorial strategy that welcomed good review articles, multicenter studies, randomized-controlled trials, and meta-analyses beneficial with regard to increasing the Journal's impact factor?

There were marked increases in the impact factor, cites per documents (2 years), SJR, and total citations during the 2-year period. KJIM was located in the upper 46.4% of JCR ranking in the category of general and internal medicine. It is comparable to other general medicine journals from Korea, such as the *YMJ* (45.7%) and the *JKMS* (47.0%) (Fig. 1). Cites per documents (2 years) (Fig. 2) and SJR (Fig. 3) have also increased over the past 2 years. Total citations in the Web of Science increased year by year (Fig. 4). The increase in the value of the H-index was remarkable from SCImagoJR, from 15 in 2010 to 19 in 2012.

A strategy to welcome good review articles, multicenter studies, randomized-controlled trials, cohort studies, and meta-analyses was recommended in a previous paper [1]. This strategy would appear to have been

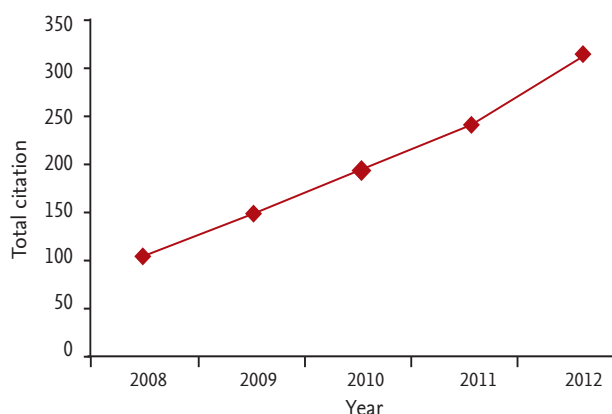


Figure 4. Total citations of *The Korean Journal of Internal Medicine* in Web of Science from 2008 to 2012. Obtained from Web of Science [Internet]. Philadelphia (VA): Thomson Reuters, c2013 [cited 2013 Sep 7]. Available from: <http://webofknowledge.com/wos/> [4].

successful from the point of view of journal metrics for review articles and special publication type articles.

The change in major source titles that cited KJIM papers indicated that the content of KJIM had also changed. It can be deduced that there was an increase in papers on molecular biology because *Molecular Biology Reports* is now the top ranking source title that cited KJIM. This differed from the previous data from 2 years earlier; then, the JKMS was the top-ranking source title that cited KJIM [1].

Many medical editors in Korea have done their best to promote their journals by providing invaluable data that can be cited internationally [7-9]. They also make great efforts to catch up with the international standards of scientific journals, such as Open Researcher and Contributor ID, CrossMark, and FundRef [10]. They would like to analyze journal metrics to know the present positions of their journals in the world medical journal market [11]. These efforts by medical editors will be beneficial to establishing journal strategies for receiving manuscripts of specific publication types.

CONCLUSIONS

In this second analysis of journal metrics, 2 years after the first, it is evident that there has been a marked increase in citation frequency by journals from the Web of Science, Scopus, and the KoreaMed Synapse. The strategy to welcome high quality review articles and specific publication types has been successful. This achievement was possible because of the diligence, vision and hard work of the editor and editorial board members. Because the publisher of KJIM, the Korean Association of Internal Medicine, is the largest and most representative specialist board society in Korea, the budget for the publication has been sufficient and many excellent physician-scientists have submitted to the society journal. There would seem to be no obstacle for the journal to be promoted to a still higher ranking in the category of general and internal medicine in the near future.

Conflict of interest

No potential conflict of interest relevant to this article is reported.

Acknowledgments

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